

Claims:

What is claimed is:

- 5 1. A data storage system comprising:
- a multiple disc assembly containing a plurality of data storage
devices disposed within having at least one connector that provides a
plurality of signals and that has at least one independent signal for each
data storage device of said plurality of data storage devices;
- 10 a multiple disc assembly receptacle adapted to receive said
assembly having a fixture connector that engages said at least one
connector;
- at least one disc controller; and
- at least one fabric that is configurable such that said fabric can
- 15 selectively connect said at least one independent signal for each data
storage device of said plurality of data storage devices to said disc
controller when in a first configuration and can selectively disconnect said
at least one independent signal for each data storage device when said
fabric is in another configuration.
- 20 2. The system of claim 1 wherein said at least one fabric comprises a port
bypass controller.
3. The system of claim 1 wherein said at least one fabric comprises a cross
- 25 point switch.
4. The system of claim 1 wherein said at least one fabric is configurable by a
host system.
- 30 5. The system of claim 1 further comprising at least one interface controller
that conveys signals between said at least one disc controller and an
external interface and that is operable to configure said at least one fabric.

6. The data storage system of claim 1 wherein said at least one connector has at least two independent signals for each data storage device of said plurality of data storage devices.

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7. The system of claim 6 further comprising:

a second fabric; and

a second disc controller wherein said at least one fabric is configurable to connect a first signal of said at least two independent signals for each data storage device of said plurality of data storage devices to said at least one disc controller and said second fabric is configurable to connect a second signal of said at least two independent signals for each data storage device of said plurality of data storage devices to said second disc controller.

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8. The system of claim 7 comprising at least one interface controller that conveys signals between said at least one disc controller and an external interface and that is operable to configure said at least one fabric and said second fabric.

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9. The system of claim 8 comprising a second interface controller that conveys signals between said at least one disc controller and said second disc controller and an external interface, and that is operable to configure said at least one fabric and said second fabric.

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10. A multiple disc assembly comprising:

a plurality of data storage devices disposed in said assembly;

a connector that communicates signals from said assembly to a fixture adapted to receive said assembly; and

a fabric disposed in said assembly in communication with said connector that is configurable to selectively connect and disconnect at least

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one data storage device of said plurality of data storage devices to at least one signal of said connector.

11. A removable data storage assembly comprising:

5 a plurality of data storage devices arranged as pairs disposed in said assembly, said assembly having at least two pairs of data storage devices; and

a connector that provides external communication for at least one independent signal for each pair of data storage device of said plurality of data storage devices.

12. A data storage system comprising:

a multiple disc assembly containing a plurality of data storage devices and having at least one connector that communicates at least one signal to a fixture and having a fabric configurable to connect each data storage devices of said plurality of data storage devices to said at least one signal and configurable to isolate at least one data storage device of said plurality of data storage devices from said at least one signal while at least one other data storage device remains connected to said signal;

20 a multiple disc assembly receptacle adapted to receive said assembly and having a fixture connector that engages said at least one connector; and

at least one disc controller that can access at least one data storage device of said plurality of data storage devices through said fixture connector.

13. The data storage system of claim 12 wherein said plurality of data storage devices are arranged in pairs with each pair having a connection to said fabric and said fabric being configurable to connect each pair of data storage devices to said at least one signal.

14. A data storage system comprising:

a multiple disc assembly containing a plurality of dual ported data storage devices and having at least one connector that communicates at least two independent signals to a fixture and having a first fabric configurable to connect a first port of each data storage device of said plurality of data storage devices to a first signal of said at least two independent signals and having a second fabric configurable to connect a second port of each data storage device of said plurality of data storage devices to a second signal of said at least two independent signals;

a multiple disc assembly receptacle adapted to receive said assembly having a fixture connector that engages said at least one connector; and

at least one disc controller that can access at least one data storage device of said plurality of data storage devices through said fixture connector.

15. The data storage system of claim 14 wherein said plurality of data storage devices are arranged in pairs with each pair of data storage devices having a first port connected to said first fabric and each pair of data storage devices having a second port connected to said second fabric, said first fabric configurable to connect and disconnect each pair of data storage devices to said first signal and said second fabric configurable to connect and disconnect each pair of data storage devices to said second signal.

16. The data storage system of claim 14 further comprising:

a second disc controller having two ports with a first port of said two ports connected to said first signal and having a second port of said two ports connected to said second signal.

17. A data storage system comprising:

a multiple disc assembly containing a plurality of data storage devices and at least one fabric and at least one disc controller disposed within and having at least one connector that communicates at least one

signal to a fixture, said fabric configurable to connect each data storage devices of said plurality of data storage devices to said disc controller, said disc controller connected to said at least one signal; and

a multiple disc assembly receptacle adapted to receive said assembly and having a fixture connector that engages said at least one connector that provides communication of signals with said at least one disc controller.

18. The data storage system of claim 17 wherein said plurality of data storage devices are arranged in a plurality of groups of at least two data storage devices each and said at least one fabric is configurable to connect and disconnect each group of said plurality of groups to said at least one disc controller.

19. A data storage system comprising:

a multiple disc assembly containing a plurality of dual ported data storage devices, a first disc controller, a second disc controller, a first fabric and a second fabric disposed within and having at least one connector that communicates at least two signals to a fixture, said plurality of data storage devices each having a first port connected to said first fabric and having a second port connected to said second fabric, said first disc controller and said second disc controller being dual ported and each having a first port connected to said first fabric and having a second port connected to said second fabric, said first disc controller connected to a first signal of said at least two signals and said second disc controller connected to a second signal of said at least two signals; and

a multiple disc assembly receptacle adapted to receive said assembly and having a fixture connector that engages said at least one connector.

20. The data storage system of claim 19 wherein said plurality of data storage devices are arranged in a plurality of groups of at least two data storage

devices and said at least one first fabric is configurable to connect and disconnect each group of said plurality of groups to said first disc controller.

5 21. The data storage system of claim 19 further comprising at least two voltage regulators wherein a first voltage regulator of said at least two voltage regulators provides power to said first fabric and a second voltage regulator of said at least two voltage regulators provides power to said second fabric.

10 22. The data storage system of claim 19 further comprising two interface controllers interposed between said connector, and said first disc controller and said second disc controller wherein a first interface controller of said two interface controllers is connected to said first disc controller using a first bus and is connected to said second disc controller using a second bus
15 and a second interface controller is connected to said first disc controller using said first bus and is connected to said second disc controller using said second bus and wherein said first interface controller and said second interface controller are connected to said first signal and to said second signal.

20 23. A method of configuring a data storage system having a multiple disc assembly containing a plurality of data storage devices installed in a multiple disc assembly receptacle and at least one fabric connected to said assembly, said method comprising:

25 detecting an error in said data storage system;
 identifying one data storage device of said plurality of data storage devices contained in said assembly as being inoperative; and
 configuring said at least one fabric to isolate said at least one data storage device.

30 24. The method claim 23 wherein said step of configuring said at least one fabric further comprises configuring a port bypass controller.

25. The method claim 23 wherein said step of configuring said at least one fabric further comprises configuring a cross point switch.

5 26. The method claim 23 wherein said step of configuring said at least one fabric further comprises configuring a multiplexer.

27. The method claim 23 further comprising removing power from said at least one data storage device.

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28. A data storage system comprising:

 a multiple disc assembly containing a plurality of data storage devices and having a connector that provides at least one separate signal line for each pair of data storage device of said plurality of data storage devices;

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 a fixture connected to a host system having a disc controller and fabric disposed within, said fixture having a multiple disc assembly receptacle adapted to receive said assembly and communicate signals therewith; and

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 computer program operable to detect an error in said storage system and to identify an inoperative data storage device in said assembly and to configure said fabric to isolate said inoperative data storage device.

29. A data storage system comprising:

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 a multiple disc assembly containing a plurality of data storage devices and at least one fabric that can be configured to connect and disconnect each data storage device of said plurality of data storage devices to at least one signal of a connector that communicates signals external to said assembly;

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 a fixture having a disc controller disposed within and having a multiple disc assembly receptacle adapted to receive said assembly and communicate therewith; and

computer program code that detects an error in said storage system and identifies an inoperative data storage device in said assembly and that configures said at least one fabric to isolate said inoperative data storage device.